



DRAFT PERMIT

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STATE OF ARIZONA
AMENDED INDIVIDUAL RECLAIMED WATER PERMIT NO. R- 512402
PLACE ID 150824, LTF 67212

1.0 AUTHORIZATION

In compliance with the provisions of Arizona Administrative Code (A.A.C.) Title 18, Chapter 9, Article 7 and A.A.C. Title 18, Chapter 11, Article 3, and amendments thereto, and the conditions set forth in this permit, the Pima County Pure Water Demonstration Facility is hereby authorized to treat Class A+ reclaimed water from the Agua Nueva WRF (APP 100655) and the Rio de Flag WRP (APP 102421), and B+ reclaimed water from the Phoenix 23rd Avenue WRF (APP 100578), in accordance with the limitations, monitoring requirements and other conditions set forth in this permit and in the rules cited above.

This permit becomes effective on the date of the Groundwater Section Manager's signature and will expire June 8, 2022, unless suspended or revoked pursuant to A.A.C. R18-9-706(A)(2). Conditions established in this permit are designed to protect public health and safety, and conserve potable water by using reclaimed resources.

1.1 PERMITTEE INFORMATION

Facility Name: Water Innovation Challenge - Pure Water Demonstration Facility

Facility Physical Address: Mobile facility; will be parked at Permittee address when not in use.

Permittee: Pima County Regional Wastewater Reclamation Department

Permittee Physical Address: 2955 W. Calle Agua Nueva
Tucson, Arizona 85745

Permittee Mailing Address: 2955 W. Calle Agua Nueva
Tucson, Arizona 85745

Facility Contact: Jeff Prevatt, Program Manager
Pima County Regional Wastewater Reclamation Dept.

Emergency Phone No.: Jeff Prevatt, Program Manager, 520 724 6040

1.2 REUSE SITES

The reclaimed water will be reused in the Water Innovation Challenge-Pure Water Demonstration Facility which is a mobile facility. The mobile facility will be parked at or adjacent to the following addresses:
Pima County Agua Nueva WRF, 2955 W. Calle Agua Nueva, Tucson, Arizona 85745
City of Phoenix 23rd Avenue WRF, 2470 S. 22s Ave., Phoenix, Arizona
City of Flagstaff Rio de Flag WRP, 600 South Babbitt Drive, Flagstaff, Arizona

1.3 AUTHORIZING SIGNATURE

David Dunaway, Manager
Groundwater Section
Arizona Department of Environmental Quality
Signed this ____ day of _____, 2017

2.0 RECLAIMED WATER USE

2.1 Legal Description

Applicant/Permittee: Pima County Regional Wastewater Reclamation Department
Mailing Address: 2955 W. Calle Agua Nueva
Tucson, Arizona 85745
Phone: 520 724 6040

Treatment Facility:
Facility Contact Person: Jeff Prevatt, Program Manager
Pima County Regional Wastewater Reclamation Dept.
Phone: (520) 724-6040

2.2 Reuse Site Description

The reuse site consists of a mobile treatment facility which will receive Class A+ and B+ reclaimed water. The mobile facility will use a series of treatment components to provide advanced treatment to achieve a high purity water product. The mobile treatment facility was designed and constructed as documented in the design report titled Southwest Water Campus Water Innovation Challenge Project Technical Memorandum No. 1 Mobile Treatment Plant Design, dated April 2017, signed and sealed by Arizona Professional Engineers. The treatment train for the mobile treatment facility includes ultrafiltration (UF), reverse osmosis (RO), an ultraviolet light advanced oxidation process (UV AOP), granular activated carbon (GAC) for hydrogen peroxide quenching, and chlorination of the final product. All materials, chemicals, and GAC media in contact with water are appropriate for drinking water, are routinely used in production of drinking water, and shall conform to ANSI/NSF 60 and ANSI/NSF 61 standards, as applicable. The system design is based on other demonstration systems operated in Texas and Oregon, but utilizes the latest models of treatment components currently available from the manufacturers. The facility was designed to meet or exceed water quality goals including primary drinking water standards. The water properly treated and produced by this facility is considered potable water that is safe and suitable for distribution for human consumption and is no longer considered reclaimed water.

The input source for the mobile treatment facility will be reclaimed water from the three wastewater reclamation facilities listed in Section 1.0. The facilities are permitted through the ADEQ Aquifer Protection Permit program, produce A+ or B+ reclaimed water, conform to new facility BADCT, and comply with the treatment and testing requirements of their respective permits.

Upon completion of treatment in the mobile treatment facility, the high purity water (Pure Water) will be stored in potable water tankers or food grade containers until delivery to local Arizona craft breweries for production of beer. The Pure Water provided to the brewers will be stored in a restricted access area at their brewery site, and will be separately marked as the property of the permittee in accordance with the agreement between the permittee and the brewery. When the monitoring results demonstrate the Pure Water meets the limits set in Table I, beer produced using Pure Water may be made available for tastings or sale directly by the breweries, or may be returned to the permittee, but may not be otherwise distributed. The permittee has provided ADEQ with an agreement governing the relationship between the permittee and the participating breweries.

The Pure Water will also be delivered to a local water bottling facility to produce bottles containing the water. The Pure Water will be retained in the sole possession of the permittee until such time as the monitoring results indicate that the water meets the limits set in Table I. Bottling of this water will follow the standard industry practice as used by the bottle water company. All of the bottled water product will be returned to the permittee after bottling.

These final beer and bottled water products will be provided at tasting events consisting of professional conferences and outreach events, where attendees will be fully apprised of the production process using

educational materials describing the origin and quality of water produced by the facility. The permittee is also required to provide educational materials and training to brewery personnel prior to their hosting tastings or sale on how to educate consumers regarding the origin and quality of the Pure Water process.

The permittee will track the volume of water provided to the bottled water company and to each brewer involved in the project. Brewer's names and addresses will be compiled and this information will be provided in a report to ADEQ by September 25, 2017, and annually on January 30th, as required in Section 3.4. The report shall also include a record of any maintenance performed or equipment replaced on the mobile treatment facility, a record of all dates and locations where the facility was used to produce Pure Water, and dates and locations where the facility was present at professional conferences and outreach events.

Minor discharge from the mobile treatment facility will consist of ultrafiltration backwash (approximately 30 gallons per hour), reverse osmosis reject (approximately 180 gallons per hour) and final process start-up water (approximately 180 gallons per day). These three waste streams will either be discharged to a sanitary sewer or to a lined impoundment at a water reclamation facility.

3.0 ALLOWABLE PERMIT LIMITS AND MONITORING REQUIREMENTS

3.1 Monitoring

Pima County Regional Wastewater Reclamation Department is authorized to treat Class A+ or B+ reclaimed water from the wastewater reclamation facilities listed in Section 1.0 with the treatment technology described in Section 2.2 of this permit.

Local indicators on instruments in the system shall be monitored and indications shall be manually logged at regular intervals during hours of actual operation at strategic points to document the following operational attributes to assure proper operation of the treatment components: Rate of flow through various components, Turbidity, Oxidation/Reduction Potential, Electrical Conductivity, Hypochlorite/Peroxide dosing levels, and Pressure Differential (across membranes and on columns). In addition, an initial validation must be conducted on the Pure Water product for enteric virus, Cryptosporidium, and Giardia.

The monitoring requirements for this facility are specified in this permit. The monitoring requirements for the source waters used by this facility are specified in the Aquifer Protection Permits (APPs) for the Pima County Agua Nueva WRF (APP 100655), the Phoenix 23rd Avenue WRF (APP 100578) and the Rio de Flag WRP (APP 102421). Unless otherwise indicated, allowable permit limits are maximum values, which shall not be exceeded. Monitoring of the treated water shall be conducted as required in Table 1: Treated Water Monitoring.

TABLE I
TREATED WATER MONITORING

Sampling Point Number	Sampling Point Identification			
1	Tap immediately following finished water chlorine contact piping			
Parameter	Limit	Units	Sampling Frequency	Reporting Deadline
Volume	Monitor	gallons	One time sampling for each source facility supplying water to the mobile facility	Within 60 days of delivering water to bottler or brewery and prior to serving water or beer
Inorganic				
Antimony	0.006	mg/l	X	X
Arsenic	0.01	mg/l	X	X
Barium	2.00	mg/l	X	X
Beryllium	0.004	mg/l	X	X
Cadmium	0.005	mg/l	X	X
Chromium	0.1	mg/l	X	X
Copper ¹	1.3	mg/l	X	X
Cyanide (as free cyanide)	0.2	mg/l	X	X
Fluoride	4.0	mg/l	X	X
Lead ¹	0.015	mg/l	X	X
Mercury	0.002	mg/l	X	X
Nickel ¹	0.1	mg/l	X	X
Nitrate (as N)	10	mg/l	X	X
Nitrite	1.0	mg/l	X	X
Selenium	0.05	mg/l	X	X
Thallium	0.002	mg/l	X	X
Turbidity ¹	1.0	NTU	X	X
Volatile Organic Compounds				
1,1Dichloroethylene	0.007	mg/l	X	X
1,1,1-Trichlorethane	0.2	mg/l	X	X
1,1,2-Trichloroethane	0.005	mg/l	X	X
1,2-Dichloroethane	0.005	mg/l	X	X
1,2-Dichloropropane	0.005	mg/l	X	X
Benzene	0.005	mg/l	X	X
Carbon Tetrachloride	0.005	mg/l	X	X
Cis-1, 2 Dichloroethylene	0.07	mg/l	X	X
Ethylbenzene	0.7	mg/l	X	X
(mono) Chlorobenzene	0.1	mg/l	X	X
o-Dichlorobenzene	0.6	mg/l	X	X
para-Dichlorobenzene	0.075	mg/l	X	X
Styrene	0.1	mg/l	X	X
Tetrachloroethylene	0.005	mg/l	X	X
Toluene	1	mg/l	X	X

Trans-1, 2-Dichloroethylene	0.1	mg/l	X	X
Trichloroethylene	0.005	mg/l	X	X
Vinyl Chloride	0.002	mg/l	X	X
Xylenes, Total	10	mg/l	X	X
1,2,4-Trichlorobenzene	0.07	mg/l	X	X
Dichloromethane	0.005	mg/l	X	X
Total Trihalomethanes	0.08	mg/l	X	X
Synthetic Organic Compounds				
2, 4-D	0.07	mg/l	X	X
2, 4,5-TP (Silvex)	0.05	mg/l	X	X
Alachlor	0.002	mg/l	X	X
Toxaphene	0.003	mg/l	X	X
Atrazine	0.003	mg/l	X	X
Carbofuran	0.04	mg/l	X	X
Pentachlorophenol	0.001	mg/l	X	X
Chlordane	0.002	mg/l	X	X
Dibromochloropropane (DBCP)	0.0002	mg/l	X	X
Ethylene Dibromide (EDB)	0.00005	mg/l	X	X
Heptachlor	0.0004	mg/l	X	X
Heptachlor Epoxide	0.0002	mg/l	X	X
Lindane	0.0002	mg/l	X	X
Methoxychlor	0.04	mg/l	X	X
Aroclor - 1016	0.00008	mg/l	X	X
Aroclor - 1221	0.02	mg/l	X	X
Aroclor - 1232	0.005	mg/l	X	X
Aroclor - 1242	0.0003	mg/l	X	X
Aroclor - 1248	0.0001	mg/l	X	X
Aroclor - 1254	0.0001	mg/l	X	X
Aroclor - 1260	0.0002	mg/l	X	X
Benzo(a)Pyrene	0.0002	mg/l	X	X
Dalapon	0.2	mg/l	X	X
Di(2-ethylhexyl)phthalate	0.006	mg/l	X	X
Di(2-ethylhexyl)adipate	0.4	mg/l	X	X
Dinoseb	0.007	mg/l	X	X
2,3,7,8-TCDD (Dioxin)	3X10 ⁻⁸	mg/l	X	X
Diquat	0.02	mg/l	X	X
Endothall	0.1	mg/l	X	X
Endrin	0.002	mg/l	X	X
Glyphosate	0.7	mg/l	X	X
Hexachlorobenzene	0.001	mg/l	X	X
Hexachlorocyclopentadiene	0.05	mg/l	X	X
Oxamyl	0.2	mg/l	X	X
Picloram	0.5	mg/l	X	X
Simazine	0.004	mg/l	X	X
			X	X
Total Coliform ¹	Absent	Present/ Absent	X	X
E. Coli ¹	Absent	Present/ Absent	X	X

¹ No primary federal numeric drinking water MCL exists for this constituent. The permit limit is derived from the EPA MCLG or Arizona's Aquifer Water Quality Standard, where available.

3.2 Monitoring Requirements [A.A.C. R18-9-706(B)(3) and A.A.C. R18-9-706(B)(5)]

All monitoring required in this permit shall continue for the duration of the permit, regardless of the status of the facility. All sampling, preservation and holding times shall be in accordance with currently accepted standards of professional practice. Trip blanks, equipment blanks and duplicate samples shall also be obtained, and chain of custody procedures shall be followed, in accordance with currently accepted standards of professional practice. Copies of laboratory analyses and chain of custody forms shall be maintained at the permitted facility. Upon request these documents shall be made immediately available for review by ADEQ personnel.

3.3 Analytical Methodology

All samples collected for compliance monitoring shall be analyzed using Arizona state approved methods. If no state approved method exists, then any appropriate EPA approved method shall be used. Regardless of the method used, the detection limits must be sufficient to determine compliance with the regulatory limits of the parameters specified in this permit. Analyses shall be performed by a laboratory licensed by the Arizona Department of Health Services, Office of Laboratory Licensure and Certification. For results to be considered valid, all analytical work shall meet quality control standards specified in the approved methods. A list of Arizona state-certified laboratories can be obtained at the address below:

Arizona Department of Health Services
Office of Laboratory Licensure and Certification
250 North 17th Avenue
Phoenix, AZ 85007
Phone: (602) 364-0720

3.4 Monitoring and Reporting Schedule [A.A.C. R18-9-706(B)(4)]

Monitoring under Table I shall be conducted and submitted in accordance with the deadline established in Table I. The report described in Section 2.2 shall be submitted by January 30th of each year. All monitoring for Table I parameters and the report shall be submitted by the permittee to the ADEQ Groundwater Section at the following address:

Arizona Department of Environmental Quality
Groundwater Section
Mail Code: 5415B-3
1110 W. Washington Street
Phoenix, AZ 85007
Phone (602) 771-4449

3.5 Records Retention [A.A.C. R18-9-706(B)(6)]

Records of all monitoring activities and manually-logged results for actual operating hours shall be retained for five (5) years.

4.0 MANAGEMENT PRACTICES

4.1 Prohibited Activities [A.A.C. R18-9-704(G)]

This permit allows the use of reclaimed water solely for the purposes allowed by this permit. Hookup of line supplying reclaimed water to the mobile treatment facility shall be managed so that there is no release of reclaimed water to any area other than to a direct reuse site.

5.0 CONTINGENCY ACTIONS

5.1 Exceedance of Table I: Treated Water Monitoring Limits

1. Upon receiving analytical results which indicate an exceedance of the limits in Table I, the permittee shall:
 - a. Immediately notify any brewer(s) that received the Pure Water exceeding the limits and direct the brewer(s) to properly dispose of the Pure Water and/or beer brewed using Pure Water.

- b. Immediately dispose of any remaining quantity of the Pure Water exceeding the limits still in the possession of the permittee.
2. Within 30 days, of receiving analytical results which indicate an exceedance of the limits in Table I, the permittee shall submit a written report to the ADEQ Groundwater Section. The report shall document all of the following:
 - a. Identification of the Table I parameter(s) exceeded, the laboratory analytical sheets, and a description of the cause including any malfunction or failure of equipment or processes;
 - b. Documentation of the notification required by 5.1.a, if applicable, and any corrective action taken or planned to mitigate the effects of the exceedance;
 - c. Proposed changes to the monitoring, operating procedures or other actions to prevent recurrence of an exceedance.

5.2 Reporting Location

Notifications of unauthorized releases and violations of discharge limits and permit conditions shall be submitted to:

Arizona Department of Environmental Quality
Groundwater Section
Mail Code: 5415B-3
1110 W. Washington Street
Phoenix, AZ 85007
Phone: (602) 771-4449

6.0 GENERAL PROVISIONS

6.1 Annual Registration Fee [A.A.C. R18-14-104(C)]

The annual registration fee for this permit is payable to ADEQ each year. The annual registration fee for individual reclaimed water permits is \$500. The permittee will receive notice from ADEQ at the time payment is due.

6.2 Changes to Facility Information in Section 1.0

The Permittee shall notify the ADEQ Groundwater Section in writing within 30 days of any change of facility information including Facility Name, Permittee Name, Mailing or Street Address, Facility Contact Person or Telephone Number.

6.3 Permit Amendment

Permittee shall request ADEQ authorization 90 days in advance of a significant modification to the reuse system, which would require permit amendment. A significant modification to the reuse system includes but is not limited to changes regarding the following: reuse category, methods of disposal of excess wastewater flow and wastewater quality monitoring location(s), monitoring frequency, and wastewater treatment changes which could affect reclaimed water quality. If there is a question as to whether something is considered a significant modification, which would require a permit amendment, please contact the following office for a determination:

Arizona Department of Environmental Quality
Groundwater Section
Mail Code: 5415B-3
1110 W. Washington Street
Phoenix, AZ 85007
Phone (602) 771-4449

6.4 Permit Transfer [A.A.C. R18-9-706(C)]

The permittee may transfer this permit to another person if the following conditions are met:

1. The permittee notifies the Director of the proposed transfer;

2. The permittee submits a written agreement containing a specific date for the transfer of permit responsibility and coverage between the current permittee and the proposed new permittee, including an acknowledgment that the existing permittee is liable for violations up to the date of transfer and that the proposed new permittee will be liable for violations from that date forward;
3. The following information for the new proposed permittee shall be provided in the notice:
 - a. name, title, mailing address, and telephone number;
 - b. if applicable, the name, title, mailing address, and telephone number of the authorized contact person for the permittee;
 - c. if applicable, a copy of the certificate of disclosure of violations required under A.R.S. § 49-109.
4. If the permittee requests to amend the permit document to reflect the change in ownership, the appropriate fee must be submitted along with the permit transfer request (see A.A.C. R18-14-103).
5. All correspondence regarding permit transfer should be made to the ADEQ address listed in Section 6.2 of this permit.

6.5 Duty to Comply [A.R.S. §§ 49-221 through 49-263]

The permittee is notified of the obligation to comply with all conditions of this permit and all applicable provisions of A.R.S. § Title 49, Chapter 2, Articles 1, 2 and 3, A.A.C. Title 18, Chapter 7 and A.A.C. Title 18, Chapter 11, Article 3. Any permit non-compliance constitutes a violation and is grounds for an enforcement action pursuant to A.R.S. § Title 49, Chapter 2, Article 4 or permit amendment, suspension, or revocation.

6.6 Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby. The filing of a request by the permittee for a permit action does not stay or suspend the effectiveness of any existing permit condition.

6.7 Other Laws and Rules

The issuance of this permit does not waive any federal, state, county, or local government rules, regulations, or permits with which this facility may have to comply.

6.8 Permit Reissuance [A.A.C. R18-9-706(A)(3)]

This permit shall expire five (5) years from the date of signature. The permittee shall file an application for reissuance not less than 120 days before the expiration of this permit. The terms and conditions of an expired permit are automatically continued pending issuance of a new permit if:

1. The permitted activity is of a continuing nature;
2. The permittee has submitted a timely (120 days before expiration date of permit) and sufficient application for a new permit; and
3. ADEQ is unable, through no fault of the permittee, to issue a new permit before the expiration date of the previous permit.

7.0 REFERENCES AND PERTINENT INFORMATION

The terms and conditions set forth in this permit have been developed based upon the information contained in the following, which are on file with the Department:

- 1 Individual Reclaimed Water Permit Application submitted by Pima County Regional Wastewater Reclamation Department, dated August 6, 2017, received August 7, 2017
- 2 Public Notice, dated August 24, 2017